

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US2004/009210

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B01F15/04 G05D11/00 B29B7/60

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B01F G05D B29B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| X | US 5 388 761 A (LANGEMAN GARY D) 14 February 1995 (1995-02-14) column 1, line 5 - line 56 column 3, line 21 - line 54 column 6, line 57 - column 7, line 50 column 11, line 19 - line 25 figure 2 | 1-4 |
| X | US 3 754 735 A (GRIFFIN T ET AL) 28 August 1973 (1973-08-28) column 1, line 3 - line 18 column 1, line 62 - column 2, line 30 figures | 1-4 |

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

A document defining the general state of the art which is not considered to be of particular relevance

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O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

Z document member of the same patent family

Date of the actual completion of the international search

6 August 2004

Date of mailing of the international search report

12/08/2004

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| X | US 4 493 286 A (CARSON WILLIAM J) 15 January 1985 (1985-01-15) | 1,4 |
| A | column 2, line 7 - line 31 column 3, line 11 - line 20 column 4, line 40 - line 68 figure 3 | 2,3 |
| X | US 6 314 996 B1 (BORGLUM ANTHONY R ET AL) 13 November 2001 (2001-11-13) | 1,4 |
| A | column 2, line 17 - line 29 column 2, line 48 - line 54 column 3, line 1 - line 31 figure 1 | 2,3 |
| A | US 5 547 000 A (SHIRK CHRISTOPHER C ET AL) 20 August 1996 (1996-08-20) cited in the application the whole document | 1-4 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/009210

| Patent document cited in search report | | Publication date | | Patent family member(s) | Publication date |
|---|----|---------------------|----------------------|---|--|
| US 5388761 | A | 14-02-1995 | CA | 2107523 A1 | 02-04-1995 |
| US 3754735 | A | 28-08-1973 | DE GB | 2134140 A1 1324513 A | 13-01-1972 25-07-1973 |
| US 4493286 | A | 15-01-1985 | ZA | 8403525 A | 24-12-1984 |
| US 6314996 | B1 | 13-11-2001 | NONE | | |
| US 5547000 | A | 20-08-1996 | DE DE EP JP | 69515976 D1 69515976 T2 0719623 A2 8243470 A | 04-05-2000 09-11-2000 03-07-1996 24-09-1996 |